USSR UDC 669.14.018.8:620.18

ZASLAVSKAYA, L. V., LASHKO, N. F., BELYAKOV, L. N., ANDREYEVA, F. S., and KAGAN, Ye. S., All-Union Scientific Research Institute of Aviation Materials

"Redistribution of Nickel and Chromium in $\alpha \rightarrow \gamma$-Transformation in Stainless Steels Containing Chromium and Nickel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1973, pp 39-42

Abstract: A study was made of Cr, Ni, and Mo redistribution when tempering in the interval of partial $\alpha \rightarrow \gamma$-transformation in Kh11N9 and Kh11N9M2 stainless steels, containing nickel and chromium and serving as base of martensitic aging stainless steels. The Kh11N9 steel contained 0.01% C, 0.022% Mn, 0.07% Si, 0.68% Cr, and 9.2% Ni; the Kh11N9M2 steel was additionally alloyed with 1.9% Mo. At heating rates $\leq$ 50 deg/sec, $\alpha \rightarrow \gamma$-transformation goes with Cr and Ni redistribution between α-and γ-phases. At partial $\alpha \rightarrow \gamma$-transformation, austenite con-

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USSR

PETROV, A. K., et al., Poroshkovaya Metallurgiya, No 3, Mar 71, pp 9-14

hydrostatic pressing with subsequent sintering had a fine-grain structure with evenly distributed carbides. The structure corresponded to a hardness of 65 HRC after tempering at 560° and 61 HRC after tempering at 620°. This indicates the possibility of producing blanks from atomized powders of high speed steel.

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USSR

UDC 621.762.224:669.14.018.253

PETROV, A. K., LEVITIN, V. V., MIROSHNICHENKO, I. S., AKIMENKO, V. B., ANDREYEVA, A. YA., BATENEVA, M. K., GOLOVKO, V. A., LABUNOVICH, O. A., ORLOV, YU. G., and ORMAN, R. Z., Ukrainian Scientific Research Institute of Special Steels, Alloys and Ferroalloys, Dnepropetrovsk State University

"Study of Atomized Powders of High-Speed Steel and Blanks Made of Them"

Poroshkovaya Metallurgiya, No 3, Mar 71, pp 9-14

Abstract: This work was performed in order to study the structure of powders of high-speed steel produced by atomizing of liquid steel with a stream of pure argon applied to a stream of metal through a slit diaphram at a pressure of 6-8 atm. For comparison, one melt was atomized using compressed air at 14-16 atm under industrial conditions. The structure and phase composition of the initial powder, powder after heat treatment, and blanks made from the powder were studied. Blanks produced by

2/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0132248

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SYSTEM OF ELECTROOPTICAL PARAMETERS CHARACTERIZING THE POLAR PROPERTIES OF THE BONDS OF ACROLEIN (I) IN THE GASEOUS PHASE, WAS CALCD. BY USING THE EXPTL. VALUES OF THE ABS. INTENSITIES OF THE IR SPECTRAL BANDS OF I, AND THE VALUE OF ITS DIPOLE MOMENT. THE EXPTL. VALUES OF THE INTENSITIES AGREED WELL FOR ALL THE BANDS WITH THE CALCD. ONES. THE VECTOR SUM OF THE ESTD. BOND MOMENTS (3.19 D) IS CONSISTENT WITH THE EXPTL. VALUE OF THE DIPOLE MOMENT OF I (3.11 D). THE EFFECT OF CONJUGATION OF THE ALDEHYDE AND VINYL GROUP IN I THE ELECTROOPTICAL PARAMETERS WAS STUDIED.

FACILITY: SARATOV. POLITEKH. INST., SARATOV, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--[illegible]

TITLE--POLAR PROPERTIES OF BONDS AND ABSOLUTE INTENSITIES OF INFRARED BANDS OF ACROLEIN -U-

AUTHOR-(04)-VAKHLYUYEVA, V.I., FINKEL, A.G., SVERDLOV, L.M., ANDREYEVA, A.I.

COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 97-102

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROOPTIC EFFECT, CHEMICAL BONDING, IR SPECTRUM, DIPOLE MOMENT, ACROLEIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1987 STEP NO--UR/0379/70/006/001/0097/0102

CIRC ACCESSION NO--AP0132248

UNCLASSIFIED

Refractory Materials

USSR UDC 666.764.2.004.12

ANDREYEVA, A. B., LEONOV, A. I., and KELER, E. K., Institute of the Chemistry of Silicates imeni I. V. Grebenshchikov of the Academy of Sciences USSR

"High-Refractory Materials on a Zirconium Dioxide Base Stabilized by Yttrium and Aluminum Oxides"

Moscow, Ogneupory, No 4, 1973, pp 42-45

Abstract: An account is given of investigation results of a refractory material of zirconium dioxide stabilized by combined additions of yttrium and aluminum oxides. Dilatometric analysis results of specimens with and without Al_2O_3 additions are discussed by reference to linear thermal expansion curves of zirconium dioxide and its solid solutions. The synthesized material, containing from 90 to 93 mol.% ZrO_2, from 3.5 to 5 mol.% Y_2O_3, and from 3.5 to 5 mol.% Al_2O_3, possessed a lower average thermal expansion coefficient and a higher heat resistance in comparison with binary solid solutions of $ZrO_2 - Y_2O_3$ and $ZrO_2 - CaO$ systems. Some physico-technological properties of the synthesized material were determined. It possesses, like zirconium-yttrium solid solution, ionic conductivity; its refractoriness is 2400-2450 °C. One figure, seven bibliographic references.

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USSR

UDC 669.296:5:621.039.5

ANDREYEVA, A. B., BELOKOPYTOV, V. S., VOTINOV, S. N., DEREBIZOV, M. D., PETIN, B. P., PAKHOMOV, Z. I.

"Study of Fuel Assemblies of the VK-50 Boiling Reactor"

Radiatsion. fiz. tverd. tela i reaktornove materialoved. -- V sb. (Radiation Solid State Physics and Reactor Material Science -- collection of works), Moscow, Atomizdat Press, 1970, pp 208-212 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I842)

Translation: The results of studying the fuel assemblies of a boiling reactor after operation in the reactor core for 5,000 hours are described. The fuel element cores are briquettes of sintered UO_2 with 2% enrichment. The can material was Zr + 1% Nb alloy, and the jacket material was Zr + 2.5% Nb alloy. A significant amount of the hydride phase was detected in the cans of ruptured fuel elements in defective places. The article contains 1 illustration and a 4-entry bibliography.

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Controls

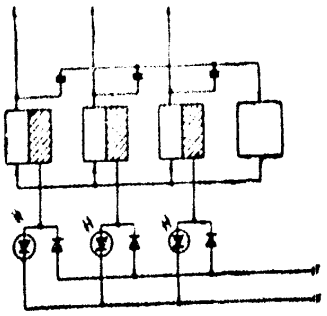
USSR UDC: 681.335

ANDREYEV-ANDRIYEVSKIY, Ye. P., ARESTOV, K. A., ZHELUDOV, V. M.

"A Device for Photodiode Data Input to Storage Register Flip-Flops"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 30, 1970, Soviet Patent No 282410, Class 21, filed 20 Mar 68, p 55

Abstract: This Author's Certificate introduces a device for photodiode data input to storage register flip-flops. The unit contains photodiodes, diodes, storage register flip-flops and a slave squegging oscillator. As a distinguishing feature of the patent, operational reliability is improved and speed is increased by connecting the input of the slave squegging oscillator to the zero states of the storage register flip-flops, while its output is connected to the reset terminals of these flip-flops.



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ANDREYEVA, A.A.

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[illegible] TPRS [illegible]

14 [illegible]

GROWTH KINETICS AND MORPHOLOGY OF AUTOEPITAXIAL GERMANIUM FILMS IN THE CHLORIDE METHOD

[illegible]

[Article by V. S. Pravdenko, A. A. Andreyeva, V. N. [illegible], I. A. Kuznetsov; [illegible], [illegible] [illegible], Part 1, [illegible], pp [illegible]]

The quantitative results of experimental studies of the growth of autoepitaxial layers of germanium by the chloride method [1-4] cannot be used for other setups without preliminary analysis which must include the investigation of mass transfer phenomena, reaction equilibrium and kinetics. In the given case this analysis is complicated by the fact that along with heterogeneous reactions intermediate reactions take place in the gas phase [5-7], the degree of the occurrence of which essentially affects the growth processes and, in turn, depends on many parameters and structural elements of the reactor. Therefore, the necessary condition of the optimal process and its simulation are a further experimental study of the chemical system Ge-Cl-H. This study, in addition, can permit an approach to the discovery of the mechanism of the reactions on the surface and the growth mechanisms under different conditions, and, perhaps, it will offer the possibility of more purposeful utilization of the growth process of the autoepitaxial layers.

In this paper a study was made of the effect of the temperature, the flow velocity and the concentration of the germanium tetrachloride in the vapor-gas mixture on the growth kinetics and morphology of the films. A vertical reactor 72 mm in diameter was used. The heating was realized by high frequency induction currents. The temperature was measured by a platinum-platinorhodium thermocouple, and it was kept constant (variations within the limits of ±2 degrees). The substrates with (111) orientation were used.

Just as any heterogeneous process realized in the flow, the growth process of the germanium films from the gas phase as a function of the simulating stage can be divided into several regions.

For very small flows where the equilibrium can be established on the surface and in the gas phase or under the conditions of complete mixing the process takes place in the so-called quasiequilibrium range [8]. In this case the growth rate is the linear function of the flow velocity and can be calculated by the formula [9]

USSR

UDC 534.222.2

ANDREYEV, Z. P., KOGDOV, N. M., Moscow

"Internal Separation in Thin Shells Upon Detonation of Explosive Layer on the Surface"

Novosibirsk, Fizika Goreniya i Vzryva, No. 4, Dec. 70, p. 532-539.

Abstract: The problem is solved of determining the thickness and velocity of the layer split off from the internal surface of a shell when a pulse load is applied to the outer surface of the shell by detonation of an explosive layer. The detonation wave is assumed normal and the standard laws of motion of a detonation wave and explosive products behind the wave are used. The problem is solved in its linear statement (without considering lateral loadings) and in the acoustical approximation using an exponential equation of state.

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USSR

ANDREYEV, YU. YA., et al., Ysvetnaya Metallurgiya, No 6, 1970, pp 82-86

vanadium content (22 wt %) is obtained by using the Ti + 25% Va alloy as the anode at 800° C with a 0.2 a/cm^2 current density. The vanadium content decreases rapidly with current density, and the dependence of coating growth rate on current density represents an extremum characteristic. A 100-micron coating can be obtained on an Fe cathode at 800° and 0.2 a/cm^2 current density in 15 minutes.

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USSR

UDC 621.793:669.8

ANDREYEV, YU. YA., KOLOBOV, G. A., LYSOV, B. S., and RYCHKOVA, N. S., Moscow Institute of Steel and Alloys, Department of High-Temperature Materials

"Process of Producing Electrolytic Coatings by Titanium-Vanadium Alloys"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 6, 1970, pp 82-86

Abstract: An investigation of the process of obtaining Ti-Va alloy coatings was conducted on the basis of the results obtained by the authors in a study of the precipitation of dense titanium and vanadium deposits. A new procedure for obtaining electrolytic titanium-vanadium coatings is suggested. It consists in maintaining in an argon atmosphere at 900° for 10-12 hours a melt based on an equimolecular KCl-NaCl composition containing approximately 5 wt % Ti in the form of chlorides. Electrolysis using ferrous, molybdenum, and titanium-vanadium cathodes, was conducted at 800 and 900° in order to obtain Ti-Va coatings at various current densities. A comparison of results shows the effect of temperature on the rate of coating growth. The results also show that the high rate of coating growth with significant

2/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129479

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE SURFACE CONTAMINATION OF AUSTENITIC STAINLESS CR-NI STEELS ON THE LIABILITY OF THESE MATERIALS TO CORROSION CRACKING AT ORDINARY AND HIGH TEMP. IS DISCUSSED IN THE LIGHT OF PRACTICAL EXPERIENCE. THUS THE PRESENCE OF FECL SUB3 IN A VAPOUR, AIR MIXTURE PASSING OVER THE STEEL SUBSTANTIALLY ACCELERATES CORROSION CRACKING AT 100-110DEGREESC. THE PRESENCE OF CU PRIME2POSITIVE AND-OR FE PRIME3POSITIVE IONS IN A MEDIUM CONTG. CHLORIDES SOMETIMES HAS THE SAME EFFECT EVEN AT ROOM TEMP.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EFFECT OF THE CONTAMINATION OF THE SURFACE OF AUSTENITIC STAINLESS STEEL ON CORROSION CRACKING AT VARIOUS TEMPERATURES -U-

AUTHOR-(03)-ANDREYEV, YU.V., SHUVALOV, V.A., GERASIMOV, V.V.

COUNTRY OF INFO--USSR

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SOURCE--FIZ.-KHIM. MEKHAN. MAT., 1970, 6, (2), 107-109

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CORROSION CRACKING, THERMAL EFFECT, IRON CHLORIDE, COPPER CHLORIDE, CHROMIUM NICKEL STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0223 STEP NO--UR/0369/70/006/002/0107/0109

CIRC ACCESSION NO--AP0129479

UNCLASSIFIED

2/2 042 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109397

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PREVIOUS USE OF A NG SUB4 OH ADDN. TO INHIBIT THE CORROSION BY IMPURE H SUB2 O PLUS AIR FOR PEARLITIC STEEL WAS EXTENDED TO THE CONDITIONS FOR NUCLEAR ENERGY PLANTS IN THE USE OF THIS CR-NI-TI STEEL, WHICH AS AT 110DEGREES IS NORMALLY INADEQUATE. A PH OF 10.5-12.0 CORRESPONDED TO 10-150 MG NG SUB4 NEGATIVE CH-KG STEAM. TESTS WERE MADE WITH A U-TUBE PREVIOUSLY COATED WITH A NACI FILM. WHEREAS THE NORMAL APPEARANCE OF CORROSION CRACKING APPEARED AFTER 100-120 HR, NO CRACKING WAS OBSD. EVEN OVER 1000 HR.

UNCLASSIFIED

1/2 042 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--USE OF AMMONIA TO PROTECT STAINLESS STEEL 1KH18N10T FROM CORROSION CRACKING IN A VAPOR AIR MEDIUM -U-

AUTHOR-(03)-SHUVALOV, V.A., ANDREYEV, YU.V., GERASIMOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZASHCH. METAL. 1970, 6(2), 236-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CORROSION CRACKING, STAINLESS STEEL, CHROMIUM NICKEL STEEL, TITANIUM STEEL, AMMONIA, CORROSION INHIBITOR, NUCLEAR POWER PLANT, WATER VAPOR, AMMONIUM HYDROXIDE, ALLOY DESIGNATION/(U)1KH18N10T STAINLESS STEEL

CONTROL MARKINGS--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1313 STEP NO--UR/0365/70/006/002/0236/0237

CIRC ACCESSION NO--AP0109397

UNCLASSIFIED

USSR

MIKAELYAN, A. L., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 5, 5 Mar 70, pp 244-246

place, accompanied by spikes. An increase in values corresponding to the region of cavity instability changes the character of the generation, and giant pulse radiation is observed along with the free-generation spikes. It is suggested that the mechanism involved in the observed phenomena is due to a change in the course of the beams in the cavity as a result of changes in the refractive index of the ruby cross section according to the field in the cavity. It is noted that the principle of giant pulse generation being considered does not depend on the radiation wavelength and apparently can be used for neodymium glass and other active media which generate in the IR range.

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USSR

MIKAELYAN, A. L., KUPRISHOV, V. F., TURKOV, YU. G., ANDREYEV, YU. V.; and SHCHERBAKOVA, A. A., Moscow Scientific Research Institute of Instrument Building

"A New Method for the Generation of a Giant Pulse in Lasers"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 5, 5 Mar 70, pp 244-246

Abstract: The article describes a new method for the generation of giant pulses in a ruby laser which does not involve the introduction of additional modulating elements into the cavity. The oscillator design was described in an earlier article by the authors. A ruby crystal with sapphire endpieces 7 mm in diameter and 120 mm long (total crystal length 157 mm) was used. Excitation was effected by means of an IFP-1200 flashlamp. The cavity consisted of a fully reflecting spherical mirror. The generation mode of the laser depends essentially on the length of the cavity. With length values corresponding to the stability region of the cavity ordinary free generation takes

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AP0027379

particles (50 × 50 × 50 mm). Most, if not all, the charcoals will probably be suitable for the prodn. of CS_2 and Si. The overall yield of tar from the woods was 15.2-19.8%; the yield of sol. tar was lower from the softwoods, while the yield of sedimentation tar was higher from pine and larch than from hardwoods. The yield of monohydric phenols from aspen tar oils was considerably higher than from other species. The compn. of the phenols generally reflected the structure of lignin from the individual woods, except for the presence of dimethyl ethers of ethyl and propylpyrogallol in some softwood tar oils. There were no essential differences in the compn. of products from pyrolysis of the various woods and that of products obtained from *B. pubescens*.

J. Stapinski

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19670541

Acc. Nr. AP0027379 Abstracting Service: CHEMICAL ABST. 3-70 Ref. Code UR 0328

45210w Pyrolysis of different wood species in a vertical continuous retort. Kislitsyn, A. N.; Yumshanov, S. N.; Khudyakova, L. A.; Ilina, E. I.; Golubev, V. N.; Andrev, Yu. V.; Galkin, V. A. (USSR). *Gidroliz. Lesokhim. Prom.* 1969, 22(8), 6–8 (Russ). Pyrolysis of some tree species indigenous to Siberia and the Far East has been studied in the lab. under conditions similar to those used in the industry. The species pyrolyzed in a previously described pilot-plant continuous vertical retort (Sukhanovskii, 1967) of a capacity 30–35 kg ovendry wood/hr/m,³ included *Betula costata* (Asian birch), *Larix sibirica*, *Pinus sylvestris*, *Picea excelsa*, and *Populus tremula*. The Asian birch, which constitutes the main species in many forests, is no longer used because of its low yield of first-grade wood, and thus is a promising raw material for prodn. of charcoal and other pyrolysis products. Parallel pyrolysis expts. were done with *B. pubescens*, the std. pyrolysis raw material. Based on ovendry wood wt., charcoal yield was approx. the same from all species, and ranged from 25.1 to 27.6%. On the basis of wood vol., it was lower by a factor 1.4–1.5 from the softwoods (aspen, spruce, pine) than from the hardwoods (the 2 birches, Siberian larch). The mech. strength of the charcoals from different wood species was approx. equal, evidently because of uniform coalification of the small

REEL/FRAME

19670540

USSR UDC: 621.373:530.145.6

MIKAELYAN, A. L., KUPRISHOV, V. F., TURKOV, Yu. G., ANDREYEV, Yu. V., SHCHERBAKOVA, A. A.

"Investigation of Emission From a Ruby Laser With Automatic Q-Switching"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 102-109 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D182)

Translation: The paper presents the results of a study of the effects of giant pulse emission in a ruby laser which does not contain special switching elements. Automatic Q-switching is achieved by using unstable configurations of the optical cavity. Seven illustrations, bibliography of five titles. Resumé.

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2/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0123528

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DESCRIBES A NEW METHOD FOR THE GENERATION OF GIANT PULSES IN A RUBY LASER WHICH DOES NOT INVOLVE THE INTRODUCTION OF ADDITIONAL MODULATING ELEMENTS INTO THE CAVITY. THE OSCILLATOR DESIGN WAS DESCRIBED IN AN EARLIER ARTICLE BY THE AUTHORS. A RUBY CRYSTAL WITH SAPPHIRE ENDPIECES 7 MM IN DIAMETER AND 120 MM LONG (TOTAL CRYSTAL LENGTH 157 MM) WAS USED. EXCITATION WAS EFFECTED BY MEANS OF AN IFP-1200 FLASHLAMP. THE CAVITY CONSISTED OF A FULLY REFLECTING SPHERICAL MIRROR. THE GENERATION MODE OF THE LASER DEPENDS ESSENTIALLY ON THE LENGTH OF THE CAVITY. WITH LENGTH VALUES CORRESPONDING TO THE STABILITY REGION OF THE CAVITY ORDINARY FREE GENERATION TAKES PLACE, ACCOMPANIED BY SPIKES. AN INCREASE IN VALUES CORRESPONDING TO THE REGION OF CAVITY INSTABILITY CHANGES THE CHARACTER OF THE GENERATION, AND GIANT PULSE RADIATION IS OBSERVED ALONG WITH THE FREE GENERATION SPIKES. IT IS SUGGESTED THAT THE MECHANISM INVOLVED IN THE OBSERVED PHENOMENA IS DUE TO A CHANGE IN THE COURSE OF THE BEAMS IN THE CAVITY AS A RESULT OF CHANGES IN THE REFRACTIVE INDEX OF THE RUBY CROSS SECTION ACCORDING TO THE FIELD IN THE CAVITY. IT IS NOTED THAT THE PRINCIPLE OF GIANT PULSE GENERATION BEING CONSIDERED DOES NOT NOT DEPEND ON THE RADIATION WAVELENGTH AND APPARENTLY CAN BE USED FOR NEODYMIUM GLASS AND OTHER ACTIVE MEDIA WHICH GENERATE IN THE IR RANGE.

FACILITY: MOSCOW SCIENTIFIC RESEARCH INSTITUTE OF INSTRUMENT BUILDING.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--A NEW METHOD FOR THE GENERATION OF A GIANT PULSE IN LASERS -U-

AUTHOR-(05)-MIKAELYAN, A.L., KUPRISHOV, V.F., TURKOV, YU.G., ANDREYEV, YU.V., SHCHERBAKOVA, A.A.
CCUNTRY OF INFO--USSR

SOURCE--MOSCOW, PIS'MA V ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, VOL 11, NO 5, 5 MAR 70, PP 244-246
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GIANT PULSED LASER, RUBY LASER, REFRACTIVE INDEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1721 STEP NO--UR/0386/70/011/005/0244/0246

CIRC ACCESSION NO--AP0123528
UNCLASSIFIED

USSR UDC 543.423:621.385

ANDREYEV, Yu. P., IONOVA, L. S., and KAZAKOVOV, V. A.

"Investigating Deposits on Electrodes and Envelopes of Pulse Tubes"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 13, No 2, Aug 70, pp 204-207

Abstract: The object of this paper is to investigate the chemical composition of the deposits formed on electrodes and envelopes in gas-discharge tubes. The investigation consisted in the spectral analysis of the tube's composition and a comparison of the results obtained with the spectra produced by burning the deposits formed on the tube components. The samples studied were placed in a graphite cup in which a vacuum of 0.1 mm Hg was maintained. By passing a current of 100-300 a the cup was heated to 1000-2000 C. As a result of heating, the highly volatile admixture from the base metal was evaporated and deposited on the graphite electrode positioned above the cup with the sample. The burning of the deposited material made it possible to determine its chemical composition. The results obtained show that the chemical composition of the deposits is independent of the shape of the tube envelope and the discharge power. W, Si, Ni, and Fe were the principal elements deposited on the cathode and adjacent area; and Mo, W, and Si, on the anode and adjacent area.

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ANDREYEV Yu. P.

Konkov, A. A. and A. V. Vorontsov.
Experimental investigation of infrared radiation from nitrogen. GiS, v. 12, no. 4, 1972, 655-660.

Infrared radiation from the free-free transitions of electrons in fields of nitrogen atoms is discussed. The aim was to eliminate some contradictions in the data on the infrared radiation from nitrogen, and to expand the range of conditions for infrared radiation investigations.

Nitrogen absorption coefficients were measured in the temperature range of 7000-8500° K, at pressures of 30-75 atm, and wavelengths of 2-6 μ. The nitrogen was heated by a shock tube, and the nitrogen gas parameters were determined on the basis of the shock-wave velocity. It is shown that the absorption from the free-free transition of electrons in nitrogen atom fields can be described by the relationship obtained by Firsov and Chibisov (ZhETF, v. 39, 1960, 1770) if $\sigma'_N = 1.6 \times 10^{-15}$ cm^2, and $\sigma'_{N_2} = 2.7 \times 10^{-15}$ cm^2, where σ is the electron elastic scattering cross section.

Andreyev, Yu. P., Ye. V. Gusev, and I. A. Semiokhin. Equilibrium in nitrogen-oxygen mixtures at high temperatures. ZhFKh, v. 46, no. 6, 1430-1432.

Equilibrium in nitrogen-oxygen mixtures within the temperature range 298 to 20,000° K is considered to evaluate the processes occurring in these mixtures in a pulse-discharge plasma. The investigation deals with two mixture ratios: $N_2:O_2 = 1:1$ (equimolecular mixture), and $N_2:O_2 = 4:1$ (air). The equilibrium was calculated for pressures which permit the operation of xenon flashlamps in an admixture of nitrogen and oxygen (760 torr) or in pure mixtures of nitrogen and oxygen (50 torr).

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USSR

UDC 621.396.6 [illegible]

ANDREYEV, Yu. [illegible], KVASOV, V. I., SEREDINA, N. N., LEONT'YEV, A. [illegible], [illegible], [illegible] F.

"A Device for Automatically Sorting Resistors into Groups by [illegible]"

USSR Author's Certificate No 258427, Filed 15 Aug 65, Published [illegible] (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V345 P)

Translation: The proposed device contains a drum type cassette [illegible] arranged in several levels, a loading vibration hopper, transporting [illegible], guide channels with rotating gates, a measuring unit and an actuating [illegible]. As a distinguishing feature of the patent, the work productivity of the [illegible] is increased and sorting precision is improved by utilizing a unit [illegible] combinations of resistance measurements connected to the transporter drive. This [illegible] is made in the form of a hollow cylinder with movable pins around the periphery in several rows. These pins are connected to electromagnets by means of levers. The electromagnets are connected to the measurement unit and are mounted on the [illegible] of a master unit located inside the hollow cylinder. The contacts controlled by the movable pins are connected in the control circuit of the actuating electromagnet.

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APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900003-6

USSR

ORBELI, A. L.; ANDREYEV, Ye. P.; et al (Joffe Physics-Engineering Institute, USSR Academy of Sciences)

"Excitation of the L_α Line During Stripping of Fast Negative Hydrogen Ions in Inerts Gases"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; June 1970, pp 1,938-1,942

Abstract: The intensity of the Lyman α-line emitted in collisions between fast negative hydrogen ions (5-40 keV) and He, Ne, Ar, Kr, and Xe atoms is measured. The cross sections for formation of hydrogen atoms in the 2s and 2p states and also the total cross sections for excitation of the n = 2 level are determined. In the energy range investigated the cross sections $\sigma'(2p)$, $\sigma(2s)$, and $\sigma'(n = 2)$ are of the order of 10^{-16} cm^2 and $\sigma'(2p) > \sigma'(2s)$. In all gases investigated (with the exception of He) the cross sections $\sigma'(2s)$, $\sigma(2p)$, and $\sigma'(n = 2)$ weakly depend on the H- ion energy. For Xe minima are observed on the cross section curves $\sigma'(2s)$, $\sigma'(2p)$, and $\sigma'(n = 2)$ at energies between 12 and 30 keV. A possible mechanism of production of excited hydrogen atoms in stripping of negative hydrogen ions as a result of removal of the «inner» electron from the H^- ion is discussed.
1/1

2/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125823

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTENSITY OF THE LYMAN ALPHA LINE EMITTED IN COLLISIONS BETWEEN FAST HYDROGEN NEGATIVE IONS (5-40 KEV) AND HE, NE, AR, KR AND XE ATOMS IS MEASURED. THE CROSS SECTIONS FOR FORMATION OF HYDROGEN ATOMS IN THE 2S AND SP STATES AND ALSO THE TOTAL CROSS SECTIONS FOR EXCITATION OF THE N EQUALS 2 LEVEL ARE DETERMINED. IN THE ENERGY RANGE INVESTIGATED THE CROSS SECTIONS SIGMA(2P), SIGMA(2S) AND SIGMA(N EQUALS2) ARE OF THE ORDER OF 10 PRIME NEGATIVE16 CM PRIME2 AND SIGMA(2P) LARGER THAN SIGMA(2S). IN ALL GASES INVESTIGATED (WITH THE EXCEPTION OF HE) THE CROSS SECTIONS SIGMA(2S), SIGMA(2P) AND SIGMA(N EUQALS 2) WEAKLY DEPEND ON THE H NEGATIVE ION ENERGY. FOR XE MINIMA ARE OBSERVED ON THE CROSS SECTION CURVES SIGMA(2S), SIGMA(2P) AND SIGMA(N EQUALS 2) AT ENERGIES BETWEEN 12 AND 30 KEV. A POSSSBLE MECHANISM OF PRODUCTION OF EXCITED HYDROGEN ATOMS IN STRIPPING OF NEGATIVE HYDROGEN IONS AS A RESULT OF REMOVAL OF THE INNER ELECTRON FROM THE H NEGATIVE ION IS DISCUSSED. FACILITY: FIZIKO-TEKHNICHESKIY INSTITUT IM. A. F. IOFFE AN SSSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EXCITATION OF THE L SUBALPHA LINE DURING STRIPPING OF FAST NEGATIVE HYDROGEN IONS IN INERT GASES -U-

AUTHOR-(04)-ORBELI, A.L., ANDREYEV, YE.P., ANKUDINOV, V.A., DUKELSKIY, V.M.

COUNTRY OF INFO--USSR

A

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 6, PP 1938-1942

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HYDROGEN, ION, PARTICLE COLLISION, HELIUM, NEON, ARGON, KRYPTON, XENON, EXCITATION CROSS SECTION, ELECTRON ENERGY LEVEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2245 STEP NO--UR/0056/70/058/006/1938/1942

CIRC ACCESSION NO--AP0125823

UNCLASSIFIED

USSR

UDC: 621.318.057

ANDREYEV, Ye. I., SKVORTSOVA, I. V.

"A NOR Logic Element"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1970, Soviet Patent No 284037, Class 21, filed 30 May 68, p. 4

Abstract: This Author's Certificate introduces a NOR logic element which contains a transistorized keying stage with nonlinear feedback based on a transistor. The device also contains a base voltage divider. As a distinguishing feature of the patent, the speed of the element is increased by connecting the collector and emitter of the nonlinear feedback transistor to the base and collector respectively of the keying stage transistor, while the base of the feedback transistor is connected to the base voltage divider.

1/1

USSR

UDC 669.295.053.27

ANDREYEV, YE. A., MAL'SHIN, V. M., and KROPACHEV, V. K.

"Thermophysical Studies of Vacuum Processes for the Separation of Titanium Sponge"

V. sb. Vakuumn. protesessy v tsvetnn. metallurgii (Vacuum Processes in Non-ferrous Metallurgy -- Collection of Works), Alma-Ata, "Nauka," 1971, pp 166-170 (from Referativnyy Zhurnal -- Metallurgiya, No 6, Jun 71, Abstract No 6G195)

Translation of Abstract: The temperature field was investigated in a vacuum apparatus for the separation of Ti sponge. A method was proposed for the calculation of the length of the basic cycle of vacuum separation. Four illustrations, 9 bibliographic entries.

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AEC/BNL FR-537-73

BNL-TR-537

(4)

DIFFERENTIAL CROSS SECTIONS AND ANGULAR DISTRIBUTIONS OF γ RAYS FROM THE (n,n'γ) REACTION OF Pr^{141} AND Ho^{165}

E.A. Andreev, S.P. Sit'ko, and V.A. Shevchenko

Kiev State University

Yadernaya Fizika (Soviet Journal of Nuclear Physics)
15, 5 (1972) pp. 856-859

Translated by S. J. Amoretty
Technical Information Division
Brookhaven National Laboratory
Upton, L.I., New York 11973
April 1973

2/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132675

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DEVICE IS DESCRIBED FOR THE IDENTIFICATION OF THE ACTIVITY OF NH SUB3 PRODUCING MICROORGANISMS. IT IS BASED ON THE CONTINUOUS REGISTRATION OF THE INCREASE OF ELEC. COND. (V. S. ANDREEV, V. I. ROSENGART, AND V. A. TORUBAROV, 1965) IN AN ELEMENT CONTG. THE BUFFERED GROWTH MEDIUM (PEPTONE). THE RESULTS ARE CHECKED BY A PARALLEL EXPT. CARRIED OUT IN THE PRESENCE OF A SPECIFIC NH SUB3 TRAPPING REAGENT (KI, NA SUB2 HPO SUB4, OR NAH SUB2 PO SUB4) PREVENTING THE INCREASE INCONDUCTIVITY DUE TO THE LIBERATION OF NH SUB3 (BASE LINE). THE METHOD IS EASY, AND TIME SPARING IN COMPARISON TO THE CONVENTIONAL ANAL. METHODS. FACILITY: LENINGRAD. FILIAL VSES. NAUCH.-ISSLED. INST. MED. PRIBOROSTR., LENINGRAD, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--USE OF THE DEVICE FERMENT 1 FOR IDENTIFYING MICROORGANISMS ACCORDING TO THEIR PROTEOLYTIC ACTIVITY -U-

AUTHOR-(04)-ANDREYEV, V.S., MATYKO, N.A., BASHTANOV, A.V., MARCHENKO, L.A.

COUNTRY OF INFO--USSR

SOURCE--MED. TEKH. 1970, 4(1), 16-17

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MICROORGANISM, AMMONIA, BIOSYNTHESIS, BACTERIOLOGIC LABORATORY INSTRUMENT, ELECTRIC CONDUCTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0460 STEP NO--UR/0451/70/004/001/0016/0017

CIRC ACCESSION NO--AP0132675

UNCLASSIFIED

USSR

UDC 576.8.078.39

MARCHENKO, L. A., ANDREYEV, V. S., MATYKO, N. A., and BASHTANOV, A. V., Leningrad Branch, All-Union Scientific Research Institute of Medical Instrumentation

"The 'Ferment-1', a Device for Identifying Microorganisms by Their Proteolytic Activity"

Moscow, Meditsinskaya Tekhnika, No 1, 1970, pp 16-17

Abstract: The proposed device is based on the release of ammonia microorganisms, E. coli in particular, under the influence of proteolytic enzymes. The amount of ammonia released is recorded in a high-frequency conductometric apparatus that uses a differential scheme of measurement in recording the electrical conductivity of a solution under study. The procedure takes 30-40 min, a fraction of the time required to identify ammonia by the conventional biochemical methods. The device was tested on an E. coli culture that does not form ammonia. The electrical conductivity of solutions with and without a specific reagent did not change.

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USSR UDC: 621.373.51.011.222

ANDREYEV, V. S.

"Power of a Tunnel-Diode Microwave Oscillator as a Function of Frequency"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Technical Electrical Communications--collection of works), Moscow, "Svyaz'", 1970, pp 122-138 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D340)

Translation: The author considers the frequency dependence of power in the load when: a) the maximum power output of the PN junctions is the same on all frequencies; and b) the load is selected in such a way that it receives maximum power. The resultant relationships can be used to calculate the parameters of diodes which ensure attainment of a given power on a predetermined frequency. Eleven illustrations, one table, bibliography of three titles. Resumé.

1/1

USSR

UDC: 621.373.029.64

ANDREYEV, V. S.

"A Quasilinear Method for Calculating Super-High Frequency Generators Based on Tunnel Diodes"

Moscow, Radiotekhnika, No 7, 1970, pp 48-57

Abstract: The author analyzes equivalent circuits along with the characteristics of tunnel diodes in super-high frequency generators by replacing the non-linear resistance of a p-n junction with the mean resistance with respect to the first harmonic. Current at the junction is considered to be close to sinusoidal for the analysis. Methodology is given for calculating steady oscillation regimes. Generators based on tunnel diodes can be calculated using clock diagrams. The original article has nine figures, 13 formulas, and ten bibliographic entries.

1/1

USSR UDC: 621.373.51

ANDREYEV, V. S. and FEDOROV, A. Ya.

"Computing Tunnel Diode Microwave Oscillators from Operating and Load Characteristics"

Moscow, Radiotekhnika, Vol. 26, No 2, 1971, pp 45-53

Abstract: This article, read at the Sixth Inter-VUZ Conference on UHF Electronics in 1969, is a continuation of an earlier paper published by the first-named author above (Radiotekhnika, Vol. 25, No 7, 1970). The authors apply the method of that paper to the computation of uhf oscillators using tunnel diodes, the general approach that of drawing the load lines on the circular diagram representing the operating characteristics of the oscillator, as is customarily done for electronic oscillators of the magnetron type. To determine the steady-state modes of the oscillator, a parallel equivalent circuit is analyzed. In this circuit, the tunnel diode is replaced by an admittance, with all other circuit components replaced by the total load admittance. The stability of the steady state is analyzed, and examples of the use of the method for practical circuits are given. The authors express their gratitude to I. A Popov, who suggested that this work be done.

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3/3 021 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0116925

ABSTRACT/EXTRACT--GOOD AGREEMENT WAS FOUND BETWEEN THE RESULTS OF THE WEDGE METHOD AND THOSE OF THE STANDARD PULSE METHOD. THE RESULTS INDICATE THAT THE ACOUSTIC FIELD OF THE WEDGE IS EQUIVALENT TO THE FIELD OF A RECTANGULAR PLATE IN A RIGID SCREEN. IT IS SUGGESTED THAT THERE IS A GAUSSIAN TYPE DISTRIBUTION OF VIBRATIONAL DELOCITY AMPLITUDES ON THE SURFACE OF THE RADIATOR IN THIS CASE. THE AUTHORS THANK A. S. KHIMUNIN FOR TAKING PART IN THE DISCUSSION OF THE RESULTS AND L. I. SAVINA FOR MEASURING THE ULTRASONIC ABSORPTION IN D-1 OIL BY THE PULSE METHOD.

UNCLASSIFIED

2/3 021 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0116925

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS UNDERTOOK TO DETERMINE THE LIMITS OF THE APPLICABILITY OF THE WEDGE METHOD FOR MEASURING THE ABSORPTION OF ACOUSTIC WAVES IN LIQUIDS AND, IN THIS CONNECTION, ATTEMPTED AN EXPERIMENTAL STUDY OF THE ACOUSTIC FIELD OF THE WEDGE, AS WELL AS TO MODEL A WEDGE SHAPED RADIATOR. AN IAB-451 SCHLIEREN DEVICE WAS USED TO STUDY THE ACOUSTIC FIELD OF THE WEDGE. THREE 28 TIMES 70 MM WEDGES WERE USED. THE PHOTOGRAPH OF THE ACOUSTIC FIELD OF THE WEDGE SHOWS THAT THE WEDGE DOES NOT GIVE A MARKEDLY DIVERGENT BEAM OF ULTRASONIC WAVES. IT IS SUGGESTED THAT THE STRUCTURE OF THE FIELD OF A WEDGE SHAPED RADIATOR IS OF A SPECIAL CHARACTER, DUE TO THE FACT THAT THE UNEXCITED PARTS OF THE WEDGE REPRESENT A TWO SIDED RIGID SCREEN. THE AMPLITUDE DISTRIBUTION ON THE SURFACE OF A PLATE ENCLOSED IN THE RIGID SCREEN SHOULD DIFFER FROM THE AMPLITUDE DISTRIBUTION ON THE SURFACE OF A FREE EQUIVALENT PLATE. IN ORDER TO TEST THIS HYPOTHESIS, THE AUTHORS CONSTRUCTED A MODEL OF A WEDGE SHAPED RADIATOR IN THE FORM OF A RECTANGULAR PLANE PARALLEL PLATE WITH AN AREA EQUIVALENT TO THE RADIATING STREAK OF THE WEDGE, GLUED INTO A TWO SIDED RIGID SCREEN OF FUSED QUARTZ. PHOTOGRAPHS OF THE ACOUSTIC FIELD OF THE EQUIVALENT PLATE ENCLOSED IN THE INFINITE SCREEN AND OF THE ACOUSTIC FIELD OF AN EQUIVALENT PLATE WITHOUT A SCREEN SHOW THAT THE LATTER RADIATOR GIVES A DIVERGENT BEAM OF ULTRASONIC WAVES AND ITS FIELD IS CONSIDERABLY WORSE THAN IN THE CASE OF THE EQUIVALENT PLATE ENCLOSED IN THE RIGID SCREEN. THE RESULTS WERE VERIFIED BY MEASURING ULTRASONIC ABSORPTION IN D-1 TYPE MINERAL OILS BY THE OPTICAL METHOD, AS WELL AS BY THE PULSE METHOD.

UNCLASSIFIED

1/3 021 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--ABSORPTION OF ULTRASONIC WAVES IN LIQUIDS MEASURED BY WEDGE METHOD -U-

AUTHOR-(02)-ANDREYEV, V.P., MIKHAYLOV, I.G.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, VESTNIK LENINGRADSKOGO UNIVERSITETA, SERIYA FIZIKA I KHIMIYA, NO 1, FEB 70, PP 70-74

DATE PUBLISHED----FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ULTRASONIC WAVE, ULTRASOUND ABSORPTION, MINERAL OIL, ACOUSTIC MEASURING INSTRUMENT/(U)IAB451 SCHLIEREN DEVICE, (U)OI OIL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1501 STEP NO--UR/0054/70/000/001/0070/0074

CIRC ACCESSION NO--AP0116925

UNCLASSIFIED

USSR

ANDREYEV, V. P., and MIKHAYLOV, I. G., Vestnik Leningradskogo Universiteta -- Seriya Fizika i Khimiya, No 1, Feb 70, pp 70-74

Good agreement was found between the results of the wedge method and those of the standard pulse method.

The results indicate that the acoustic field of the wedge is equivalent to the field of a rectangular plate in a rigid screen. It is suggested that there is a Gaussian-type distribution of vibrational velocity amplitudes on the surface of the radiator in this case.

The authors thank A. S. KHIMUNIN for taking part in the discussion of the results and L. I. SAVINA for measuring the ultrasonic absorption in D-1 oil by the pulse method.

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ANDREYEV, V. P., and MIKHAYLOV, I. G., Vestnik Leningradskogo Universiteta -- Seriya Fizika i Khimiya, No 1, Feb 70, pp 70-74

should differ from the amplitude distribution on the surface of a free equivalent plate.

In order to test this hypothesis, the authors constructed a model of a wedge-shaped radiator in the form of a rectangular plane-parallel plate with an area equivalent to the radiating streak of the wedge, glued into a two-sided rigid screen of fused quartz. Photographs of the acoustic field of the equivalent plate enclosed in the infinite screen and of the acoustic field of an equivalent plate without a screen show that the latter radiator gives a divergent beam of ultrasonic waves and its field is considerably worse than in the case of the equivalent plate enclosed in the rigid screen. The results were verified by measuring ultrasonic absorption in D-1 type mineral oils by the optical method, as well as by the pulse method.

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USSR

UDC 534.232

ANDREYEV, V. P., and MIKHAYLOV, I. G.

"Absorption of Ultrasonic Waves in Liquids Measured by Wedge Method"

Leningrad, Vestnik Leningradskogo Universiteta -- Seriya Fizika i Khimiya, No 1, Feb 70, pp 70-74

Abstract: The authors undertook to determine the limits of the applicability of the wedge method for measuring the absorption of acoustic waves in liquids and, in this connection, attempted an experimental study of the acoustic field of the wedge, as well as to model a wedge-shaped radiator. An IAB-451 Schlieren device was used to study the acoustic field of the wedge. Three 28x70-mm wedges were used. The photograph of the acoustic field of the wedge shows that the wedge does not give a markedly divergent beam of ultrasonic waves. It is suggested that the structure of the field of a wedge-shaped radiator is of a special character, due to the fact that the unexcited parts of the wedge represent a two-sided rigid screen. The amplitude distribution on the surface of a plate enclosed in the rigid screen

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USSR

ANDREYEV, V. P., MIKHAYLOV, I. G., Vestnik Leningradskogo universiteta, No. 4, Nov 70, pp 48-56

pressure on the receiver to the pressure of an ideally plane wave as a function of the generalized distance showed that with an increase in k the number of oscillations rises but their amplitude decreases, so that the first diffraction maximum appears for $ka = 5$. It is suggested that the tables can be used to calculate diffraction corrections in measurements of the speed of ultrasound and of absorption in the case of a uniform distribution of the amplitudes of oscillatory velocities on the emitter under uniform sensitivity of the receiver over the entire surface.

USSR

UDC 534.2

ANDREYEV, V. P., MIKHAYLOV, I. G.

"Calculation of Diffraction Corrections for Ultrasonic Rectangular Emitters in a Rigid Screen"

Leningrad, Vestnik Leningradskogo Universiteta, No. 4, Nov 70, pp 48-56

Abstract: The increased results in measuring absorption of ultrasound when the dimensions of the converter become comparable to the wavelength are discussed. This is explained by the fact that the nearer field of the acoustical emitter has a complex structure due to diffraction. The corrections for diffraction that must be made in experimental data to account for distortion in the field to obtain correct values of the absorption are calculated. Tables are given showing the values of the relative pressure on the receiving transducer as a function of the generalized distance $s = z\lambda/a^2$, where a is the length of a side of the square and z is the distance between converters. The calculations were carried out on a BESM-4 computer. Integrals over the interval [0, 1] were calculated by Simpson's rule with automatic selection of the step. The tables were compiled for sets of parameters ka = 1, 2, 5, 10 for a = 10 mm = const. Graphs of the modulus of the ratio of the average

1/2

USSR UDC 534.22

ANDREYEV, V. P., and MIKHAYLOV, I. G.

"Approximate Calculations of Diffraction Corrections for a Wedge-shaped Radiator"

Leningrad, Vestnik Leningradskogo Universiteta, Seriya Fizika i Khimiya, No 1, Feb 71, pp 146-153

Abstract: The article considers a rectangular platform vibrating as a flat piston in an infinite screen. The distribution of the amplitudes of vibration velocities is taken as uniform on the piston and equal to zero in the screen. The medium in which acoustic waves propagate is assumed to be unlimited and possesses zero absorption. A formula is obtained for determining the mean pressure on a receiving transducer. This formula is suitable for calculating zero diffraction corrections for a wedge both for velocity and for absorption. Results are given for numerical calculations of mean pressure as a function of generalized distance. The article includes a table giving the results of diffraction correction calculations for a rectangular radiator.

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Semiconductor Technology

USSR

UDC 546.681'19:548.522

IVANYUTIN, L. A., MISHANOV, D. N., D'YACHKOVA, N. N., SABININ, A. G., and ANDREYEV, V. M.

"Study of Silicon Migration During the Deposition of Epitaxial Layers of Gallium Arsenide From the Gaseous Phase"

Moscow, Neorganicheskiye Materialy, Vol 9, No 12, 1973, pp 2116-2119

Abstract: A study was made of the transfer of the short-lived radioisotope Si^{31} from the arsenous chloride and of the source of gallium during the epitaxial accretion of GaAs. The system H_2-$AsCl_3$-Ga was used as the gaseous phase and either irradiated quartz or elemental silicon mixed with the Ga was the Si source. Six runs were made under varying conditions and the amount of Si^{31} varied from below detection limits to 2×10^{20} cm^{-3}. The greatest concentration of Si in the epitaxial layer was observed when the elemental Si or crushed quartz was thoroughly mixed with a liquid containing 3-4% Ga. In this case, values for Si were similar to those for SiO_2. The proposed method for Si transfer is via the molecular species SiAs and SiO.

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USSR UDC: 8.74

ANDREYEV, V. L., NAGORSKIY, A. A., SHAPIRO, A. P.

"Modeling the Population of Fish With a Two-Year Life Span and a Single Spawning Period"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 167-175 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V603)

Translation: The paper gives some information on construction of models, estimation of parameters, and also on the results of modeling the dynamics of numbers of an industrial breed of fish (the prototype of the models considered is the population of the South Kuril gorbusha [a member of the salmon family]). The algorithms were realized on the "Minsk-22" computer. Authors' abstract.

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USSR UDC: 669.[illegible]

ANDRONOV, V. I., VISHNYAKOV, A. V., and MOROZOV, A. K.

"Influence of Gases on Welding of Cavities during the Rolling [illegible]"

Tr. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 67-70

Abstract: Available data indicate that the main reason for [illegible] in rimmed, semikilled and killed steels is contamination of various cavities, bubbles, and cracks of the ingot with various products. Sometimes, [illegible] separation is accompanied by convexity of the metal, with formation of cavities filled with gas under significant pressure. This gas might be [illegible] to the shrinkage cavity during crystallization of [illegible], [illegible] of cavities. The influence of hydrogen, carbon dioxide, and nitrogen, the most common gases found in these cavities, on the quality of welding was studied as a function of temperature and degree of deformation of gas-filled cavities. Artificial cavities were created in steel type 3sp (0.20% C, 0.17% Si, 0.60% Mn, 0.026% S, 0.01% P, 0.05% Cr, 0.04% Ni), occupying 2.5% of the volume of the specimen. It was established that the gases prevent welding of the metal. Higher quality welding can be achieved with lower degree of deformation of the specimen by increasing the temperature of the metal before rolling.

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2/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PREPN. CONDITIONS FOR A DENSE BUBBLE FREE INGOT DURING DEOXIDN. OF CARBONACEOUS METAL BY SI HAVE BEEN STUDIED PREVIOUSLY, BUT ALTHOUGH THE DEPENDENCE OF THE POSITION OF THE BOUDNDARY BETWEEN THE REGIONS OF THE DENSE AND THE RISING METAL ON THE RELATION OF THE DEOXIDIZING CAPABILITIES OF SI AND C WITHIN THE ENTIRE CRYSTN. RANGE HAS BEEN ESTABLISHED, THE EFFECT OF THE EXTERNAL PRESSURE AND THE STATE OF GAS SATN. OF THE STEEL ON THE POSITION OF THIS CURVE HAVE NOT BEEN TAKEN INTO CONSIDERATION. AT A C CONTENT OF 0.10-0.16PERCENT THE SI CONCN. NECESSARY FOR THE RISING OF THE METAL DOES NOT CHANGE, SINCE THE COMPN. OF THE MATRIX XOLN. AND THE TEMP. IN THIS REGION REMAIN CONST. WITHIN THE 0.16-0.20PERCENT C RANGE THE CRIT. SI CONTENT DECREASES WITH INCREASING STATE OF GAS SATN. AS A RESULT OF THIS, THE DEGREE OF LIQUATION OF THE GASES IN THE MATRIX SOLN. BEING IN EQUIL. WITH FE, AND CONSEQUENTLY ALSO THE PARTIAL PRESSURE OF H AND N ABOVE THIS SOLN. ALSO DECREASE. ALONG WITH THIS, THE AMT. OF FE IN THIS REGION INCREASES IN THE HARDENING SOLN. AND THE DEGREE OF C LIQUATION IN THE MAXTRIC SOLN. ALSO SHARPLY INCREASES. FOR THE 0.20-0.39PERCENT C REGION THE CRIT. CONCN. OF SI SHARPLY INCREASES ASSOCD. WITH INCREASED LIQUATION OF C, H, AND N IN THE MATRIX SOLN. BEING IN EQUIL. WITH SOLID FE. AT 0.39-1.35PERCENT C THE CRIT. SI CONCN. AGAIN DECREASES, WHICH IS MORE NOTICEABLE ON MELTS WITH INCREASED H AND N CONCN. FOR 1.35-4.3PERCENT C, THE SI VALUE GRADUALLY DECREASES. THE MOST HARMFUL FOR FORMATION OF GAS BUBBLES IS H. FACILITY: SIB. MET. INST., NOVOKUZNETSK, USSR.

UNCLASSIFIED

1/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF EXTERNAL PRESSURE AND GAS SATURATION OF A METAL ON THE FORMATION OF GAS BUBBLES IN A KILLED STEEL INGOT -U-

AUTHOR-(02)-ANDREYEV, V.I., VISHNYAKOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 91-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--KILLED STEEL, INGOT CASTING, METAL CONTAINING GAS, METAL CRYSTALLIZATION, GAS PRESSURE, ALLOY COMPOSITION, CARBON, SILICON, HYDROGEN, NITROGEN, METAL POROSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0811 STEP NO--UR/0148/70/013/004/0091/0096

CIRC ACCESSION NO--AT0132905

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135166

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYDROLYSIS OF NITROSYL COMPLEXES OF RU IN AQ. NANO SUB3 SOLNS. (WITH CONST. IONIC STRENGTH OF 0.6) WAS STUDIED AT ROOM TEMP. BY A DIALYSIS METHOD (NIKOL'SKII, ET AL., 1965); 3 DIFFERENT RU COMPLEXES EXIST IN THE PH RANGE 1-9.5: A COMPLEX WITH A DIALYSIS CONST. LAMBDA EQUALS 0.146 AT PH LESS THAN 3.5, A COMPLEX WITH LAMBDA EQUALS 0.114 AT PH 3.5-7, AND A COMPLEX WITH LAMBDA EQUALS 0.095 AT PH GREATER THAN 7. THE TRANSITION FROM THE 1ST TO THE 2ND COMPLEX WAS ASSOCD. WITH THE ADDN. OF 1.5 PLUS OR MINUS 0.5 HYDROXYL GROUPS, WHILE THE TRANSITION FROM THE 2ND TO THE 3RD COMPLEX WAS ASSOCD. WITH THE ADDN. OF 1 HYDROXYL GROUP; LOG K (WHERE K IS THE EQUIL. CONST. OF THE REACTION) FOR THE TRANSITION FROM THE 2ND TO THE 3RD COMPLEX WAS 7 PLUS OR MINUS 1, WHILE LOG K FOR THE TRANSITION FROM THE 1ST TO THE 2ND COMPLEX COULD HAVE VALUES OF 10 OR 20, DEPENDING ON THE NO. (1 OR 2) OF HYDROXYL GROUPS ADDED TO THE COMPLEX.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--USE OF DIALYSIS TO STUDY COMPLEXING. V. USE OF DIALYSIS TO STUDY THE HYDROLYSIS OF RUTHENIUM NITROSYLNITRATE -U-

AUTHOR-(03)-NIKOLSKIY, B.P., ANDREYEV, V.I., LYUBTSEV, R.I.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(1), 173-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIALYSIS, HYDROLYSIS, RUTHENIUM COMPOUND, NITROSO COMPOUND, NITRATE, IONIC BONDING, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1505 STEP NO--UR/0186/70/012/001/0173/0175

CIRC ACCESSION NO--AP0135166

UNCLASSIFIED

USSR UDCL 621.375.024(088.8)

ANDREYEV, V. I., SINENKO, V. G.

"A Two-Channel DC Voltage Amplifier"

USSR Author's Certificate No 261465, filed 3 Jul 68, published 28 May 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D86 P)

Translation: This Author's Certificate introduces a two-channel DC voltage amplifier which contains input and output converters, an AC voltage amplifier and an adder connected in series in one of the channels. To improve accuracy of time coincidence of the amplified pulse fronts in the adder, the other channel of the DC voltage amplifier is based on series-connected AC voltage amplifiers and an output converter which are also connected to the adder. One of the output terminals of the adder is connected through a deep negative feedback circuit between the decoupling resistors of both channels and a common input resistor.

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USSR UDC: 621.834.634

ANDREYEV, V. G., PASHKOVSKIY, V. V.

"A Cylindrical Cavity Resonator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1970, Soviet Patent No 284197, Class 21, filed 23 Jun 69, pp 62-63

Abstract: This Author's Certificate introduces a cylindrical cavity resonator which contains conducting discs with drift tubes. As a distinguishing feature of the patent, the design provides for excitation of an electrical field along the resonator axis in the $\pi/2$ standing wave mode and for increased coupling between individual cells of the resonator by installing conducting diaphragms in the middle of the spaces between the conducting discs, the diameter of the openings in the diaphragms being less than the diameter of the discs.

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RAN / / R 76.0 / 5 ... 73

Dec. 1972

ANDREYEV, V.G.

II. SHOCK WAVES IN SOLIDS

Andreyev, V. G. and P. I. Ulyakov. Finite dimension volumetric thermal shock in a transparent plate. I-FZh, v. 23, no. 1, 1972, 158-159.

The presence of high temperature gradients during a short-termthermal shock requires the application of a hyperbolic equation of thermal conductivity, which takes into account the finite heat propagation velocity (HPV). In dielectrics, the thermal conductivity of the lattice is the basic mechanism of heat transfer, and the HPV equals the velocity of sound c_0 in the medium. The movement of temperature and stress perturbations with equal velocity along a material signifies the propagation of a single wave. When the given initial conditions are discrete (instantaneous shock), the pressure, amplitude, and density in such a wave undergo a shock, and equations of thermal elasticity are inapplicable for finding the parameters of the medium during a rupture of its continuity.

In real processes, thermal shock has a finite duration, and stress accretion takes place continuously behind the wave leading edge. In the present work, the solution of the dynamic problem of thermal elasticity for a three-dimensional shock of finite duration is obtained by the method of Laplace transforms. Expressions are obtained for the temperatures and stresses, and the problem is solved in parallel with the parabolic equation of thermal conductivity. The quasi-static stressed state is a particular case (when $c_0 \rightarrow \infty$). Introducing heat-propagation velocity equal to sound velocity into the thermoelasticity problem eliminates the physically contradictory appearance of stresses prior to wave arrival at a given point. Analysis shows that the amplitude of the

USSR

UDC 621.385.6(088.8)

ANDREYEV, V.G., ZAYDMAN, D.G.

"Method Of Suppression Of Secondary Electron Resonance Discharge"

USSR Author's Certificate No 263767, filed 15 July 67, published 10 June 70 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A100P)

Translation: A method is proposed for suppression of a secondary electron resonance discharge in the vacuum gap between two electrodes excited by a high-frequency electrical field of operating frequency. The method differs in the fact that between the electrodes mentioned above an additional high-frequency electrical field is excited at a frequency differing from the operating frequency.

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USSR

ANDREYEV, V. G., ULYAKOV, P. I., Prikladnaya mekhanika, Vol. VIII, No. 7, Jul 72, pp 54-59

thermoelasticity is solved using the temperature field. Equations for the elastic potentials obtained from the equations of motion are solved by operational methods. It is shown that the stresses are described by a set of damping oscillations of harmonic form and arbitrary shape with a steep leading front and have the form of a simple wave for a finite heating time. In limiting cases the solution obtained transforms into familiar particular cases.

USSR UDC 539.3:536.21

ANDREYEV, V. G., ULYAKOV, P. I., Moscow

"Volume Thermal Impact in a Plate"

Kiev, Prikladnaya mekhanika, Vol. VIII, No. 7, Jul 72, pp 54-59

Abstract: Thermal impact in a plate with a cylindrical volume source, the intensity of which is an arbitrary function of time, is discussed. It is noted that problems of thermal impact in a half-space were solved for cases of an instantaneous and a linear rise in the temperature of the surface. The authors observe that it became possible to achieve volume heating of a substance in a very short time with the development of powerful radiation sources such as electron beams and lasers. The amplitude and slope of the thermoelastic wave which determine the breakdown of the material are functions not only of the duration of the radiation pulse but also of the spread of the initial elastic wave by heat conductivity. For simplicity the heating of an infinite plate by a volume cylindrical source is considered where the intensity drops exponentially with depth and is an arbitrary function of time. Laplace and Fourier transformations are applied to find the general form of the temperature field. The dynamic problem of

USSR

UDC 666.764.4:669.716:621.74

KARKLIT, A. K., SOKOLOV, A. N., LEBEDEVA, M. F., ZEGZHDA, M. P., Deceased, All-Union Institute of Refractories, SIMONOV, V. N., Leningrad Plant for Processing of Nonferrous Metals, ANDREYEV, V. F., PARTIN, I. A., CHEREPOK, G. V., Kuybyshev Metallurgical Plant imeni V. I. Lenin

"Graphite-Containing Products for Casting of Aluminum Alloys"

Ogneupory, No. 2, 1971, pp 13-15

Abstract: A composition and method of manufacture of graphite-containing refractory products of low heat conductivity for casting of aluminum and aluminum-based alloys have been developed. The reduction in heat conductivity is achieved by introducing asbestos to the mass and using low-temperature (700°C) roasting. The products have shown satisfactory strength in service.

1/1

USSR

UDC 669 71.042.62

BALAKHONTSEV, G. A., ANDREYEV, V. F., DEVYATKIN, A. B., TEMNIKOV, A. V., SHADRIN, G. G.

"Selection of Height of the Direct Cooling of an Ingot With Water During Continuous Casting With Blowing"

Tekhnol. Legkikh Splavov. Nauchno-tekhn. Byul. VILSa [The Technology of Light Alloys, Scientific and Technical Bulletin of the All-Union Institute of Light Alloys], 1970, No. 5, pp 9-12. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G135 by S. Krivonosova).

Translation: In order to determine the optimal height of the cooling band, electric modeling of the temperature fields in an ingot 720 mm in diameter was performed with a casting rate of 20 mm/min, using type-D16 alloy. Modeling was performed using a quasi-analog method, allowing both conductive heat transfer and heat transfer due to movement of the body (convection) to be considered. The optimal water blowing height was found to be 160±10 mm. However, the desired parameter is rigidly related to the quantities which determine it. For example, a change in blowing height by 20 mm changes the surface temperature from 50 to 150°. Therefore, when a new technology is being introduced, preliminary investigation of the process with the electric model is required. 4 figs.

1/1

USSR

UDC: 621.396.677

IVANOV, I. [illegible], [illegible], V. A., and [illegible], Yu. [illegible]

"Dispersion Field of a Plane Wave in the Near Zone [illegible] Sphere"

Tr. Leningr. in-ta [illegible] mekh. i optiki (Transactions of the Leningrad Institute of Precision Mechanics and Optics) 1970, No. 69, pp 34-37 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3[illegible]5)

Translation: A determination is made of the secondary (diffracted) field in the presence of a plane electromagnetic wave on a sphere of given radius and with given parameters. The secondary field in the near zone is computed. The optimal radius of the sphere from the point of view of the permissible distortions of the primary field is determined. One illustration, biblio[illegible] of five. V. S.

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USSR

ANDREYEV, V. A., et al., Doklady Akademii Nauk SSSR, Vol 202, No 6, 1972, pp 1247-1250

the matrix $A + bc^*$ is Hurwitz. The quality criterion of the control $\sigma \in \mathfrak{A}$ is defined by the functional $J(\sigma) = \overline{\lim_{T \to +\infty}} T^{-1} J_0^T(\sigma, a)$. Three theorems are stated and proved in order to study the problem of minimizing the functional $J(\sigma)$ in the set $\mathfrak{A}_a$. The control $\sigma_0 \in \mathfrak{A}_a$ is called optimal if $J(\sigma_0) \leq J(\sigma)$ $\forall \sigma \in \mathfrak{A}_a$. In connection with the fact that if the optimal control exists it is not unique, the concept of a local optimal control is introduced.

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USSR

UDC 519.9+62-50

ANDREYEV, V. A., KAZARINOV, YU. F., YAKUBOVICH, V. A., Leningrad State University imeni A. A. Zhdanov

"Synthesis of Optimal Controls for Linear Inhomogeneous Systems in the Problem of Minimizing the Mean Value of a Quadratic Functional"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 6, 1972, pp 1247-1250

Abstract: A study was made of the control system described by a differential equation of the type

$$dx/dt = Ax + bo + f(t), \qquad (1)$$

where x is the vector (of order n) of state of the system, o is the control vector (of order m) of the system, A is a permanent matrix of dimensionality n x n, b is a permanent matrix of dimensionality n x m, and f(t) is a vector function of perturbations of order n. All the matrices and vectors are real. It is assumed that the function f(t) is measurable and bounded in $[0, \infty)$ and that the pair (A, b) is controliable; that is, that among the columns of the matrices b, Ab, ..., $A^{n-1}b$ there are n linearly independent columns. The real vector function o(x, t) is called the admissible control if equation (1) with $\sigma = \sigma(x, t)$ under the given initial condition x(0) = a has the solution x = x (t) in $[0, \infty)$. The set of admissible controls is denoted by $\mathfrak{N}_a$; $e^{*}x \equiv \mathfrak{N}_a$ if

2/2 · · 011 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM ABOUT THE INFLUENCE OF LIFTED TEMPERATURE INVERSIONS ON THE DEVELOPMENT OF CONVECTION IS CONSIDERED IN THE PAPER.

89

UNCLASSIFIED

1/2 · · 011 UNCLASSIFIED PROCESSING DATE--19SEP70

TITLE--NONADIABATIC RISING OF INDIVIDUAL AIR VOLUMES UNDER CONDITIONS OF LIFTED TEMPERATURE INVERSION IN THE ATMOSPHERE -U-

AUTHOR--ANDREYEV, V.

COUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 2, PP 42-49

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--TEMPERATURE INVERSION, ATMOSPHERIC CONVECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1221 STEP NO--UR/0050/70/000/002/0042/0049

CIRC ACCESSION NO--AP0103109

UNCLASSIFIED

2/2 042 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124823

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTEGRAL RADIATION LOSSES IN A DENSE XENON PLASMA WERE MEASURED USING A PULSED DISCHARGE IN A CLOSED QUARTZ TUBE FILLED WITH XENON WITH INITIAL PRESSURE FROM 50 TO 600 MM HG WITH INSIDE DIAMETER FROM 4 TO 15 MM AND 150 MM DISTANCE BETWEEN ELECTRODES. PLASMA TEMPERATURE AS A FUNCTION OF INITIAL INTENSITY OF DISCHARGE WAS DETERMINED. CURVES OF ELECTRICAL AND OPTICAL MAGNITUDE VARIATIONS DURING THE DISCHARGE ARE GIVEN. IT WAS FOUND THAT IN SUFFICIENTLY DENSE PLASMA (P IS GREATER THAN 10 ATM AND T EQUALS 10,000 TO 20,000DEGREESK) THE MAGNITUDE OF ENERGY LOSSES PER UNIT CYLINDER SURFACE VARIED VERY LITTLE FROM ONE ANOTHER. PLASMA PRESSURE WAS ESTIMATED USING CALCULATIONS OF EQUILIBRIUM IONIZED PLASMA COMPOSITION AT GIVEN TEMPERATURE, INITIAL GAS PRESSURE, AND RADIAL TEMPERATURE DISTRIBUTION. TABULATED DATA ON RELATIVE RADIATION LOSSES IN PLASMA CYLINDERS WERE USED FOR ESTIMATING PLASMA TEMPERATURE.

UNCLASSIFIED

1/2 042 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--RADIATION ENERGY LOSSES FROM DENSE XENON PLASMA -U-

AUTHOR-(02)-ANDREYEV, S.I., GAVRILOV, V.YE.

A

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZ. VYS. TEMP.; 8: 203-5(1970)

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--XENON, DENSE PLASMA, DISCHARGE TUBE, HEAT LOSS, GAS PRESSURE, PLASMA TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1168 STEP NO--UR/0294/70/008/000/0203/0205

CIRC ACCESSION NO--AP0124823

UNCLASSIFIED

USSR

ANDREYEV, S. I.; BAYKOV, O. G.; DASHUK, P. N. (Leningrad)

"Energy Loss from an Optically Thin Layer of a Xenon Plasma"

Moscow, Teplofizika Vysokikh Temperatur; September-October, 1970; pp 929-33

ABSTRACT: In an experiment the authors determined the power of the losses from a thin annular layer of a xenon plasma heated by a pulse induction discharge in the 12,000-42,000°K temperature range under pressures of 3-20 atmospheres. The power of the losses for one heavy particle is a single-valued function of the temperature and under the conditions of this experiment is related to the radiation. A method was suggested for determining the temperature of the plasma according to data on the electrical power measured at the instant of the maximum temperature of the plasma.

The article includes 6 equations, 3 figures, and 1 table. There are 21 bibliographic references.

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USSR

ANDREYEV, S. I., GAVRILOV, V. YE., Teplofizika Vysokikh Temperatur, No 6, Nov/Dec 70, pp 1256-1259

transmitted by macroscopic motion of the gas (convective heat exchange) and also the kinetic energy of this motion is infinitesimally small. The validity of this assumption requires special verification. In these experiments pulse discharges in quartz tubes filled with xenon up to a pressure of 400 and 600 mm Hg were used; the length of the tube between the electrodes was 150 mm and the internal diameter was 7.4 or 10.5 mm. Special measures were taken to avoid axial motion of the gas. The proposed method is recommended for studying plasmas of any composition and density and also for a nonequilibrium but quasistationary plasma; the method can also be applied with plasmas formed by pulsed laser radiation.

USSR

UDC 533.9.08

ANDREYEV, S. I., GAVRILOV, V. YE., Leningrad

"Method for Experimentally Determining the Thermodynamic Values of a Nonideal Plasma"

Moscow, Teplofizika Vysokikh Temperatur, No 6, Nov/Dec 70, pp 1256-1259

Abstract: A method is proposed for experimentally determining simultaneously the internal energy of a plasma, its temperature, and the volume belonging to one heavy particle. It is noted that theory of nonideal plasma is now in the development stage and is in critical need of experimental data relative to its physical properties. The method is based on an analysis of the power balance in pulse heating of the plasma in a closed volume. In the absence of gasdynamic motion, the power expended on heating the plasma is spent only on a change in its internal energy and on losses associated with radiation and conductive thermal conductivity. By determining experimentally the power expended on heating the plasma and the power spent on losses associated with radiation and conductive thermal conductivity and also the temperature of the plasma, one can determine the heat capacity of the plasma from the power balance equation. This equation is valid under the assumption that the heat

1/2

USSR UDC: 621.327.4

Andreyev, S. I., Candidate of Technical Sciences, Baykov, O. G., Dashyk, P. K., Candidate of Technical Sciences, Zobov, Ye. A., and Sinitsyn, N. V.

"A Gigawatt Xenon Flash Lamp"

Optiko-Mekhanicheskaya Promyshlennost', No 5, 1972, pp 19-21.

Abstract: This work presents the results of testing of a flash lamp with an internal quartz tube diameter of 60 mm, wall thickness 3 mm, distance between electrodes 900 mm, filled with xenon to the pressure of 20 mm/Hg. The energy of the lamp is 10^5 j, current transmission time is 10^{-4} sec. A temperature of 2000°K is reached; the radiation spectrum is continuous. Data are presented on the distribution of radiation energy through the spectrum. The discharge is performed under conditions such that the magnetic pressure on the plasma column at the current maximum is near the gas kinetic pressure.

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USSR

ANDREYEV, S. F., et al., Sudostroyeniye, No 2, 1972, pp 61-62

position of the assembled engine relative to the theoretical axis of the shafting is corrected by means of clamps. The procedure was used to install the 6RD76 and 8DKRN74/160-2 main diesel engines on the Velikiy Oktyabr' and Baltika class ships. The results indicate that the procedure can also be used for assembly and installation of the large diesel engines of other ships built on sloping building slips. It permits a significant reduction in the ship construction cycle by combining the installation and hull assembly operations

2/2

USSR

UDC 621.436.002.72-181.2

ANDREYEV, S. F., BARASH, M. SH.

"Procedure for Monitoring the Position of Large-Scale Diesel Engines During Installation"

Leningrad, Sudostroyeniye, No 2, 1972, pp 61-62

Abstract: A procedure is outlined for monitoring the position of large-scale diesel engines during assembly on a sloping building slip. In this procedure the accuracy of monitoring the engine position does not depend on the degree of readiness of the stern of the ship for boring. A procedure is also presented for marking or boring the deadwood seats. The position of the diesel engine is checked by sighting on a remote light marker through a special sighting telescope set on two control points of the theoretical axis of the shafting and also variation of the noncoaxial alignment of the linked elements of the shaft line by means of an optical compensator built into the sighting telescope. The position of the engine is checked using the DP-477 optical device and a special attachment. The declivity boards for attaching the instrument and the remote markers are installed in the engine room parallel to the framing (with a deviation of no more than $\pm 1°$) and plumb considering the angle of inclination of the building slip (a deviation of no more than $\pm 1°$). When necessary, the

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ISOMERIZATION OF 3,3,DIPHENYL,1,PHENYLETHYNYL,1,HYDROXYPHTHALAN (I) OR 3,3,DIPHENYL,1,(P,TOLYLETHYNYL),1,HYDROXYPHTHALAN (II) TO [illegible] 3,3,DIPHENYL,1,PHTHALANYLIDENEMETHYL KETONE OR TOLYL 3,3,DIPHENYL,1,PHTHALANYLIDENEMETHYL KETONE IN BOILING ACID PROCEEDS SLOWER THAN IS THE CASE WITH 3,3,DIMETHYL I OR II ANALOGS. THE FOLLOWING REACTIONS ARE SIMILAR IN BOTH SERIES. THE REACTION OF I OR II WITH 3,METHYL,1,PHENYL,2,PYRAZOLIN,5,ONE GAVE BETA,(3,3,DIPHENYL,1,PHTHALANYLIDENE),ALPHA,(3,METHYL,1, PHENYL,2,PYRAZOLIN,5,ON,4,YLIDENE)ETHYLBENZENE OR P,(BETA,(3,3,DIPHENYL,1,PHTHALANYLIDENE), ALPHA,(3,METHYL,1,PHENYL,2,PYRAZOLIN,5,ON,4,YLIDENE)ETHYL) TOLUENE. THE REACTION OF I WITH 2,4,(O SUB2 N) SUB2 C SUB6 H SUB3 NHNH SUB2 GAVE 2,PH SUB2 (OH), CC SUB6 H SUB4 C(C TRIPLE BOND CR):NNHC SUB6 H SUB3 (NO SUB2) SUB2,2,4 (R EQUALS PH OR P,MEC SUB3 H SUB4. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REACTIONS OF HYDROXYPHTHALANS WITH ACETYLENIC RADICALS. 3,3,DIPHENYL,1,ARYLETHYNYL,1,HYDROXYPHTHALANS -U-

AUTHOR-(03)-MELENTYEVA, T.G., ANDREYEV, S.A., PAVLOVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 853-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETYLENE, FREE RADICAL, BENZENE DERIVATIVE, HYDROXYL RADICAL, KETONE, AMINE, ORGANIC NITRO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2082 STEP NO--UR/0366/70/006/004/0853/0856

CIRC ACCESSION NO--AP0125669

UNCLASSIFIED

USSR

UDC 621.378.345.4

ANDREYEV, R. B., and VOLOSOV, V. D.

"Some Peculiarities of Two-Particle Laser, Second-Harmonic Generation"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 16, No 2, Feb 72, pp 363-364

Abstract: The article describes results of an analysis and experimental study of the angular spectrum of the second harmonic as different types of interactions ($oo \rightarrow e$ and $oe \rightarrow e$) are effected in a nonlinear KDP crystal for a two-particle laser. It is shown that the angular spectrum of the converted radiation differs significantly for these interactions, although the frequency spectrum of this radiation is the same in both cases.

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USSR

ANDREYEV, P.A., et al. [illegible] elektronika, [illegible]

process, induction [illegible] of the [illegible] observed. Curves are given of the following: 1) [illegible] parameters k_α, b_α, [illegible] values of the synchronism angle in a LiIO$_3$ crystal [illegible] 2) Experimental dependence of the angular synchronism [illegible] dependence of the parameter k_α on the synchronism [illegible] the efficiency of second harmonic generation [illegible] sity of the radiated power at the crystal. The authors [illegible] Tenyukov for [illegible] and interest in the work. [illegible] editors, 28 Dec 197[illegible] after revision, 1[illegible] Oct 197[illegible].

2/2

USSR [illegible]

ANDREYEV, P.F., [illegible], A.G.

"Some Peculiarities Of The Generation Of Second Harmonic [illegible] Metaniobate Crystal"

Kvantovaya elektronika (Quantum Electronics), [illegible]

Abstract: [illegible]

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APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900003-6

Industrial

USSR

UDC 621.311.25:621.039.002.7

POZMOGOV, YE. N., and ANDREYEV, P. A.

"Current Trends in Developing Equipment for Atomic Energy Plants"

Energomashinostroyeniye (Power Plant Equipment Construction), No 1, 1970, pp 1-5 (from RZh-Teploenergetika, No 5, May 70, Abstract No 5U47)

Translation: Based on recent publications, current trends in design of atomic power plant equipment are discussed. In addition to specific factors relating to atomic power production in several countries, general considerations are treated which concern basic construction of AES (atomic energy plants). A brief treatment is given to ways and means of optimizing thermoelectric apparatus in atomic plants, methods of making atomic plant energy competitive, and development of reliable equipment. Competitive atomic plant electric power will be possible only when generating equipment can be serially produced. Data are cited on the creation of atomic plant equipment construction departments in leading capitalist countries, resulting from the combined design efforts of large power-producing companies; discussion is also included on construction of large factories and plants specializing in production of atomic power plant equipment. Nine figures, three tables, four references.

1/1

ANDREYEV, O.N.

Acc. Nr: AP0043737 Abstracting Service: 5/70 Ref. Code: UR0370
INTERNAT. AEROSPACE ABST.

A70-23789 * Phase structure and heat resistance of Ti3Al-Nb alloys (Fazovoe stroenie i zharoprochnost' splavov Ti3Al-Nb). O. N. Andreev. *Akademiia Nauk SSSR, Izvestiia, Metally*, Jan.-Feb. 1970, p. 193-196. 10 refs. In Russian.

Results of a study of the phase equilibrium and heat resistance of alloys of the ternary system Ti3Al-Nb along a radial section. A phase equilibrium diagram of Ti3Al-Nb is constructed by the methods of thermal and microstructural analysis. Niobium in this system is found to reduce the polymorphic transformation point. The nature of the chemical interaction between the elements in the system is confirmed by a study of the concentration dependences of the hardness, electrical resistance, and density of the alloys. On the basis of a study of the heat resistance of Ti3Al-Nb by the centrifugal bending method at a temperature of 700 C and a stress of 20 kg/sq mm, it is ascertained that the maximum heat resistance is possessed by an alloy containing 80 to 81 wt % Ti, 15 to 16 wt % Al, and 3 to 5 wt % Nb.

A.B.K.

ALS

1/1

REEL/FRAME
19770143

18

USSR

UDC 669.295.5'71'293

[redacted], O. N., Moscow

"Phase Structure and High-Temperature Strength of Ti-Al-Nb Alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan-Feb 1970, pp [illegible]

Abstract: An investigation was made of the phase equilibrium and high-temperature strength of alloys of the ternary system Ti-Al-Nb according to the radial section of the system. Using methods of thermal and microstructural analysis, a diagram of phase equilibrium of Ti-Al-Nb was constructed. Aluminum in this system lowers the temperature of polymorphic transformation. The nature of the chemical interaction of elements of the system was established, which is verified by the study of the concentration dependences of hardness, electrical resistance, and density of alloys. A study of the high-temperature strength of alloys Ti-Al-Nb using the centrifugal method of bending at 700° C and stress of 20 kg/mm^2 showed that the alloy containing 80-81 wt. % Ti, 15-16 wt. % Al, and 3-5 wt. % Nb, possessed the maximum high-temperature strength.

1/1

USSR

NARTOVA, T. T., and ANDREYEV, O. N., Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 194-196

In the equilibrium state the Young's modulus and modulus of rigidity of the alloys decrease monotonically as the tantalum content in the alloys increases. In the two-phase region, the elastic characteristics vary insignificantly. The high-temperature strength of the alloys was studied at 400°C for 1,300 hours, at 500°C for 1,000 hours, and at 600°C for 10 hours. From creep studies by the centrifugal method, composition--high-temperature strength diagrams were constructed indicating the dependence of the time of achieving a given bending deflection on the composition by comparison with the phase structure of the alloys of this system. At a test temperature of 400°C the high-temperature strength of Ti-Ta alloys increases within the limits of the -solid solution, and the alloys near the boundary of the $\alpha/(\alpha+\beta)$ regions have an insignificant maximum high-temperature strength. Then the high-temperature strength of the alloys increases as the tantalum content increases.

Increasing the test temperature to 500-600°C caused a reduction in high-temperature strength of the alloys. This variation of high-temperature strength of the alloys as a function of composition and phase structure in diagrams of state of the second type is explained by the solution mechanism of hardening of the alloys in the α and β-solid solution domain.

2/2

USSR

UDC 669.295.5'294

NARTOVA, T. T., and ANDREYEV, O. N., Moscow

"High-Temperature Strength and Elastic Properties of Ti-Ta Alloys"

Moscow, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 194-196

Abstract: This article contains a study of the effect of composition and phase structure of Ti-Ta alloys on their elastic characteristics, high-temperature strength, and density. The study was made using alloys with 40 atomic percent Ta (~72 weight %). The test procedures are described and the resultant data are presented and analyzed. It is noted that the modulus of normal elasticity and the modulus of rigidity of Ti-Ta alloys vary insignificantly as a function of composition (up to 30 atomic % Ta). The high-temperature strength of the alloys at 400-600°C increases as the tantalum content increases.

Microstructural investigation of annealed alloys demonstrated that the alloys containing up to 3.5 atomic % Ta have a polyhedral structure of the α-solid solutions. The microstructure of the alloy containing from 5 to 40 atomic % Ta consists of a mixture of $(\alpha + \beta)$-phases. Alloys with 40 atomic % Ta and higher reveal a single-phase structure of the β-solid solutions. The microstructure of the alloys did not change, in practice, after the high-temperature strength testing.

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USSR

ANDREYEV, O. N., et al., Izvestiya Akademii Nauk SSSR, Metally, No 3, May-Jun 71, pp 206-209

Alloys near the transition boundary $\alpha_2(\alpha_2+\beta)$ are the most thermally stable, while from the vanadium side of the section, the alloy with 85% V is the most stable in the section β region. The character of chemical interaction along the Ti_3Al-V section is confirmed by the study of the content vs property (HV,ρ) diagram.

2/2

Titanium

USSR

UDC 669.295.5'71'292

ANDREYEV, O. N., NARTOVA, T. T., and KORNILOV, I. I., Moscow

"Phase Structure and Thermal Stability of Ti_3Al-V-System Alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 3, May-Jun 71, pp 206-209

Abstract: Results are presented of an investigation of phase equilibrium and thermal stability of ternary Ti-Al-V system alloys along the radial Ti_3A-V section. The preparation of samples and subsequent heat treatments are described. Thermal differential and microstructural analyses were used. The hardness, specific electrical resistance and density of alloys were measured, and the thermal stability of alloys was studied with respect to their composition. The results are presented in the form of microstructures, phase equilibrium diagrams, variation of specific electrical resistance and hardness with vanadium content, dependence of sag on deformation time, and dependence of thermal stability on composition. The results show that, in a given section, vanadium reduces the phase transformation temperature in solid state alloys.

2/2 032 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140308

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABSORPTIVITIES (EXTINCITON COEFFS.) OF CATION RADICALS DERIVED FROM P PHENYLENEDIAMINE, TETRAMETHYL,P,PHENYLENEDIAMINE, BENZIDIEN, 4,HYDROXY,4 PRIME,AMINOBIPHENYL, 4,4 RPIME,DIHYDROXYBIPHENYL, AND 2,HYDROXYFLUORENE ARE TABULATED WITH BAND FREQUENCIES. THE SPECTRA OF CATION RADICALS WERE RUN AT 77DEGREESK IN ETOH. THEY WERE OBTAINED BY IRRADN. OF THE SAMPLE WITH UV LIGHT (250-340 M MU), OR IWTH VISIBLE LIGHT (400 M MU). THE CONCN. OF THE CATION RADICALS WAS CALCD.. FROM THE DECREASE OF ABSORPTION CORRESPONDING TO THE PARENT COMPD. CATION RADICALS ARE THE ONLY PRODUCT AFTER TREATMENT WITH VISIBLE LIGHT; STABILIZED ELECTRONS ARE FORMED SIMULTANEOUSLY AFTER UV LIGHT TREATMENT. CATION RADICALS DERIVED FROM PHENOLS ARE CHARACTERIZED BY BANDS AT LOWER FREQUENCIES, WITH INTENSITIES LOWER THAN THOSE OF THE CORRESPONDING AMINES. LONGER IRRADN. CAUSES DISAPPEARANCE OF BANDS ASSIGNED TO CATION RADICALS OF SOME AMINES (PHNH SUB2, PH SUB2 NH, 4,AMINOBIPHENYL). FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EXTINCTION COEFFICIENTS FOR AROMATIC CATIONS IN EHTANOL -U-

AUTHOR-(03)-SMIRNOV, V.A., ALFIMOV, M.V., ANDREYEV, O.M.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 285-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--UV LIGHT, CATION, PHOTOEFFECT, PHENYLENE, DIAMINE, ANILINE, ABSORPTION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/E04 STEP NO--UR/0456/70/004/003/0285/0286

CIRC ACCESSION NO--AP0140308

UNCLASSIFIED

USSR

UDC 519.2:62-50

ANDREYEV, N. V. and KOZ'MIN, P. D.

"Asymptotic Monitoring and Successive Replacement of Poisson Processes"

Kiev, Tekhn. kibernetika--Sbornik (Technical Cybernetics -- Collection of Works), No 9, 1970, pp 102-110 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V258, by R. Liptser)

Translation: Suppose $\xi(t)$ is a Poisson process with parameter λ, which is a model of the process being monitored. If $\xi(t)$ becomes larger than some level m, the process being monitored must be discontinued, then replaced by the same process, starting from zero. Suppose T is the length of the time segments through which observations of the process $\xi(t)$ are carried out, τ_m is the time elapsed until the process $\xi(t)$ surpasses the level m, ν_m is the number of observations during this time period, and γ_m is the time that the process $\xi(t)$ remains above the level m until its detection by the inspection. The mean cost of operating the system is given by the formula $C(T) = a M\nu_m + b M\gamma_m$ where a is the cost of a single inspection and b is the penalty per unit time that $\xi(t)$ spends above the level m. It is required to select T so that C(T) will be at a minimum. It is shown that $T = \sqrt{\frac{2a(m+1)}{b\lambda}}$ in a stationary mode reaches the minimum C(T).

1/1

USSR

KARACHENETS, D. V., MASSAL'SKIY, G. L., ANDREYEV, N. V.

"A Mass Exchange Process as a Controlled Random Process"

Upravlyayemyye Sluchayn. Protsessy i Sistemy [Controlled Random Processes and Systems -- Collection of Works], Kiev, 1975, pp 158-175 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1975, Abstract No 6V210).

Translation: The theory of optimal control of random processes is applied to problems related to mass transfer processes, examples of which include fractional distillation, absorption and extraction.

USSR

UDC 539.3

ABOVSKIY, N. P., ANDREYEV, N. N.

"The Total Functional of an Elastic Anisotropic Shell of Variable Thickness"

V sb. Prostranstv. konstruktsii v Krasnoyarsk. krave (Three-Dimensional Structures in the Krasnoyarsk Region -- Collection of Works), Krasnoyarsk, 1972, pp 28-38 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V115)

Translation: A total functional for an elastic thin anisotropic shell of variable thickness that involves 15 parameters was constructed. From this one can obtain equations of the theory of thin shells and particular functionals including the Lagrange, Castigliano, etc. Taking into account anisotropy, variable thickness, and curvature makes it possible to use the derived functional for a variational formulation. Cases of an isotropic ribbed shell as a variety of shells of variable thickness and a multilayer anisotropic shell of constant thickness are considered. 8 ref. Authors' abstract.

1/1

2/2 025 UNCLASSIFIED PROCESSING DATE--11DEC76

CIRC ACCESSION NO--AP0142717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE EDGES OF CUTS IN FIRED GIOH STEEL APPEAR SLITS OF UP TO 5 MM IN DEPTH, CAUSED BY HIGH TENSIONS ON THE CUT EDGES IN COOLING AND BY PROCESSES OCCURRING IN THE STEEL DURING THE CUTTING. TO REDUCE THESE SLITS THE INTENSITIES OF THE PROCESSES IN THE STEEL MUST BE LOWERED. THIS ENTAILS MAKING THE CUTS IN A PROTECTIVE ATMOSPHERE WITH MINIMUM HEAT INTAKE. TO CHOOSE THE BEST METHOD FOR EXECUTING THIS SCHEME, THE AUTHORS INVESTIGATED VARIOUS TYPES OF METAL CUTTING. THE RESULTS OF THEIR RESEARCH ARE PRESENTED. THEY FOUND THAT THE FORMATION OF SLITS CAN BEST BE REDUCED BY USING AIR ARC OR PLASMA CUTTING OF THE STEEL WITH MINIMUM HEAT APPLICATION AND ACCELERATED COOLING. THEY ALSO DISCOVERED THAT THE CAUSES OF THE SLIT FORMATION ARE THE THERMOPHYSICAL CHARACTERISTICS OF THE STEEL, A HIGH PHOSPHORUS CONTENT, BURNING OUT OF CARBON AND MANGANESE, THE PRECIPITATION OF CARBIDES, THE GROWTH OF THE GRAINS AND THE OXIDATION OF THEIR EDGES.

FACILITY: IRKUTSK POLYTECHNICAL INST. FACILITY: IRKUTSK HEAVY MACHINERY CONSTRUCTION PLANT.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--TREATMENT OF DEFECTS IN G13L STEEL CASTINGS UNDER WELDING -U-

AUTHOR-(03)-ANDREYEV, N.I., SHAKHOV, A.YE., GUREVICH, L.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO. 6, 1970, PP 42-43

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STEEL, THERMAL EFFECT, PHYSICAL CHEMISTRY PROPERTY, OXIDATION, WELD DEFECT, STEEL WELDING, METAL CASTING, METAL CUTTING/[illegible]13L STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605041/B07 STEP NO--UR/0135/70/000/006/0042/0043

CIRC ACCESSION NO--AP0142717

UNCLASSIFIED

USSR

ANDREYEV, N. I.

"Use of Variation Methods for Solution of Problems of Optimization of Dynamic Systems Using Statistical Criteria"

Moscow, Nelineynyye i Optimal'nyye Sistemy, 1971, pp 7-18

Abstract: A method is given for derivation of equations satisfying the optimal weight function for optimization of dynamic systems on the basis of statistical criteria. An equation is obtained for the extreme and transversality conditions for 2 functionals which are statistical criteria for extremal control systems. Sufficient conditions for the minimum of one of the functionals are found.

1/1

Andreyev, V.A.

UDC: 61:002.6

PROBLEMS DEALING WITH LINKAGE OF MEDICAL RECORDS IN ACCORDANCE WITH DATA IN THE FOREIGN PRESS

[Article by V.V. Kanep, V.A. Andreyev, L.A. Paavke, K.K. Viksna, D.Ya. Prilutskaya, Moscow, Sovetskoye Zdravookhraneniye, Russian, No 11, 1972, submitted 6 May 1972, pp 65-67]

One of the most important aspects of optimizing medical information is to solve the problem (with automated processing) of picking up data on hand or correlating data. The term correlation of medical data (medical record linkage, according to foreign authors) refers to integration of separately recorded (in different sources and at different times) information concerning the physical condition of an individual (or family). The actual concept of medical record linkage has been known since the last century. Selection of available facts was done manually to solve various public health and medical problems, however, in the case of manual data processing, linkage of data which requires quite laborious work to alphabetize large blocks of records was limited to simultaneous, specially organized works. Effective adoption in public health and medicine of modern computer technology opens up basically new opportunities and raises the matter of creating a system of medical record linkage (Dunn; Acheson).

One of the first and foremost tasks in computer processing and linkage of medical data is to work out a reliable and effective method of identification; in other words, each part of the information gathered should include an element that would permit referring it to a specific individual. These are the requirements of identification methods: uniqueness, that is 100 percent selectivity; universality, i.e. the possibility of application to all systems using demographic data; consistency, i.e. no variability for the lifetime of an individual; accessibility; economy (Acheson, 1968; Thierbach; Auger).

In the case of manual processing, complete surnames, names, date and place of birth, and several other tags are compared, and on their basis a conclusion is reached as to whether the entries refer to the record of a single individual. This means of identification is not applicable to

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APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900003-6

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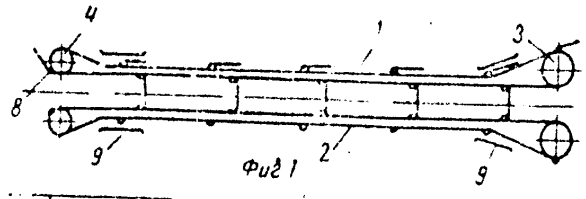
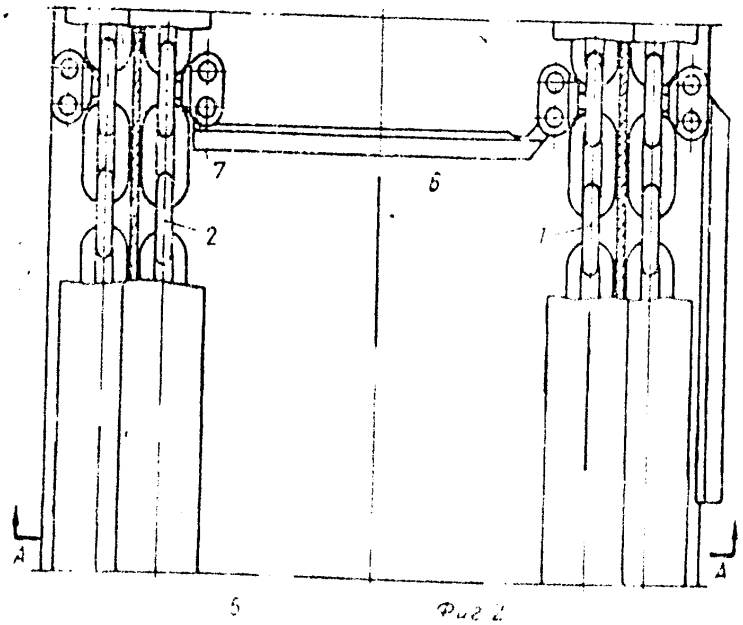


Фиг 1



Фиг 2

19781384

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UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 2-70

243485 SCRAPER CONVEYOR of the horizontal, closed-circuit type, has two independent, endless traction chains, one fitted with hinged scrapers, the other with support stops. Chains 1 & 2 pass around drive heads 3 and end heads 4, and run along a conveyor trough. The hinged scrapers mounted on chain 1 are pressed flat into the idle position by guides 9 as the chain passes round drive head 3. After passing round end head 4, the scrapers are opened into the operating position by guide 8 and are supported along the conveying run by stops mounted on chain 2. 22.8.66. as 1099100/27-11, ANDREEV, M.M. (15.9.69) Bul. 16/5.5.69. Class 81e, 5d, Int. Cl. B 65g, E 21f.

V

18

1/2

19781383

2/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105314

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. WERE PERFORMED WITH 12.4-MEV T GENERATED IN AN ELECTROSTATIC GENERATOR. OWING TO THE LARGE TOTAL CROSS SECTION OF THE (T,P) REACTION AND THE LARGE CONTRIBUTION OF P FROM THE PRIME16 O (T,P) PRIME18 O REACTION TO THE TOTAL P SPECTRUM THE CONTRIBUTION OF ACCIDENTAL COINCIDENCES INCREASED AND GOOD STATISTICAL PRECISION OF RESULTS COULD NOT BE OBTAINED. BY TAKING INTO CONSIDERATION THAT IN THE VICINITY OF THE FISSION THRESHOLD THE FORM OF THE P SPECTRUM IS DETD. ONLY BY THE FISSION PROBABILITY THE FISSION THRESHOLD OF PRIME239 U BY N WAS 0.065 PLUS OR MINUS 0.12 MEV. AS THE FISSION THRESHOLD, THE ENERGY AT THE HALF HEIGHT OF THE DECREASE OF THE P SPECTRUM IS TAKEN. THE FISSION THRESHOLD OF PRIME234 U IN THE REACTION PRIME233 U(T,PF) WAS 0.65 PLUS OR MINUS 0.15 MEV. ALSO, AT LOWER EXCITATION ENERGIES OF THE NUCLEUS PRIME240 U BELOW THE FISSION THRESHOLD THE PRONOUNCED FISSION IS OBSD.

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